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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,712	11/12/2002	Uday V. Deshmukh	PU2101	4264
23454	7590	07/23/2004	EXAMINER	
CALLAWAY GOLF COMPANY 2180 RUTHERFORD ROAD CARLSBAD, CA 92008-7328			PASSANITI, SEBASTIANO	
			ART UNIT	PAPER NUMBER
			3711	
DATE MAILED: 07/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,712

Applicant(s)

DESHMUKH ET AL.

Examiner

Sebastiano Passaniti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

This Office action is responsive to communication received 05/10/2004 –
Amendment.

Claims 1-8 remain pending.

Following is an action on the MERITS:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 STAND rejected under 35 U.S.C. 103(a) as being unpatentable over
Long in view of applicant's admission of Prior Art (specification pages 1, 2 and page 5),
Kodama, Saito, Parente, Chou and Zebelean. As to claim 1, the patent to Long differs
from the claimed invention in that Long does not disclose the specific titanium alloy, the
mass and volume of the head and the thickness of the various elements of the head.
Note, Long does recognize that titanium or its alloys may be used to fabricate the head.
Saito shows it to be old in the art of titanium alloy production to manufacture a titanium
alloy comprising aluminum, tin, chromium, molybdenum and zirconium. Saito
acknowledges that excellent strength, rigidity and wear resistance may be achieved with
reduced cost over conventional titanium alloys when alpha phase titanium is employed
and specifically notes that the material is useful for the fabrication of club heads (col. 9,
lines 30-65). While the material exemplified by Saito lacks the silicon required by the
claims, it is clear other titanium alloys exist that indeed comprise the required elements.

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Saito is merely presented to teach that the use of alpha-phase titanium is well known in the golf club art. As for the specific claimed titanium alloy, the applicant has disclosed on page 5 of the specification that the material is commonly available. Clearly, the applicant has not invented the claimed material. As for the required mass and volume requirements of claim 1 and the required volume constraint of claim 8, Kodama shows it to be old in the art to provide a hollow club head with a maximum weight of 200 grams and a volume of between 300 and 900 cubic centimeters. These parameters are optimized to control the moment of inertia of the club head so as to control flight distance and limit the amount of directional veering of a struck ball from a designated path (col. 1, lines 1-66). In view of the patent to Kodama, it would have been obvious to modify the device in the cited art reference to Long by adjusting the mass and volume of the head to include limitations consistent with those that are recited in claim 1, the motivation being to desirably enhance the moment of inertia of the club head. As for the claimed coefficient of restitution (COR), the claimed figure falls within the guidelines set forth by the USGA. Note the patent to Chou indicating that a COR outside (greater than) 0.83 falls outside of acceptable USGA parameters (col. 1, lines 24-33). Thus, the skilled artisan would have found it obvious to modify the Long device to include a COR of between 0.80 and 0.83, the motivation being to ensure that the club head complies with USGA regulations. Concerning the claimed thickness values of the crown, sole and face made part of claim 1 and the striking plate thickness noted by claim 2, observe that Zebelean discusses that the various shell pieces may be fabricated with a thickness that optimizes the weight distribution of the head. Specific values for the sole,

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face and crown are provided by Zebelean in col. 4, lines 25-55. While the actual value for the sole and crown thickness disclosed by Zebelean is slightly outside the range claimed by the applicant, the skilled artisan, having gleaned an appreciation for the effect of shell thickness on the overall weight distribution as discussed by Zebelean, would have found it obvious to modify the Long device to include suitable ranges for the crown, sole and face parts, the motivation being to control the driver's weight. This observation regarding the effect on weight distribution by varying the thickness of the shell pieces is further exemplified by the Parente reference (col. 4, line 61 through col. 5, line 40). Moreover, the applicant has not disclosed that the claimed dimensions are critical. With respect to claims 2-7, the applicant has admitted (specification, pages 1,2) that prior art clubs include a club body and striking face normally welded together at a perimeter of the club body, wherein the face element is usually formed or forged and the body element is investment cast. In addition, the base reference to Long already discloses that the body element may be cast from titanium or its alloys while the striking face is either stamped (formed) or cast (col. 3, lines 44-55). While Long does not specifically mention welding, the Prior Art admitted by the applicant obviates the use of a welding operation to join mating pieces of a club head assembly. Specific to the "whereby" phrase added to claims 1 and 2, this language does not further limit the structure of the golf club head.

Claim 4 STANDS objected to because of the following informalities:

As to claim 4, line 2, --the-- should be included after "wherein".

Appropriate correction is required.

RESPONSE TO ARGUMENTS

In the arguments received 05/10/2004, the applicant contends that the prior art reference to Saito teaches away from using alpha-phase titanium alloys. Applicant further indicates that the now claimed "whereby" limitation defines over the prior art of record by setting forth that the inward face progression of the striking plate insert is less than 0.01 inch after at least 500 hits of a golf ball at a swing speed of 110 miles per hour.

In response to these arguments, it is noted that the prior art reference to Saito extols the benefits of using alpha-phase titanium alloys in the golf club head art, specifically noting that excellent strength, rigidity and wear resistance may be achieved with reduced cost over conventional titanium alloys when alpha phase titanium is employed. While the material exemplified by Saito lacks the silicon required by the claims, it is clear other titanium alloys exist that indeed comprise the required elements. Saito is merely presented to teach that the use of alpha-phase titanium is well known in the golf club art. As for the specific claimed titanium alloy, it is again emphasized that the applicant has disclosed on page 5 of the specification that the material is commonly available. Clearly, the applicant has not invented the claimed material. Further, the applicant appears to have separately attacked the reference to Saito without consideration to what the combined teachings of the applied prior art references would have suggested to the skilled artisan. With respect to the "whereby" clause added to claims 1 and 2, this language does not further limit the structure of the golf club head. Since the structure of the claimed head has been obviated by the combination of

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references applied, it would appear that the combination of prior art devices must naturally include the claimed inward face progression.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sebastiano Passaniti whose telephone number is 703-308-1006. The examiner can normally be reached on Mon-Fri (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Vidovich can be reached on 703-308-1513. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sebastiano Passaniti
Primary Examiner
Art Unit 3711

S.Passaniti/sp
July 16, 2004